

CLAIMS

What is claimed is:

1. A method for progressively processing data comprising:
 - receiving data at a first node of a plurality of processing nodes;
 - associating an indicator comprising a state of progress with data;
 - executing processing of said data wherein an amount of said processing depends upon said state of progress;
 - transferring said processing to a second processing node.
2. The method of claim 1 wherein said associating occurs at one of said plurality of processing nodes.
3. The method of claim 1 wherein said state of progress indicates said amount of processing already performed.
4. The method of claim 1 wherein said indicator further comprises a result of said processing.

5. The method of claim 1 wherein said indicator comprises a reference to an amount of data processed.
6. The method of claim 5 wherein said reference comprises a pointer.
7. The method of claim 5 wherein said reference comprises a value.
8. The method of claim 1 wherein said indicator further comprises a pointer to a size of said data.
9. The method of claim 1 wherein said indicator comprises a reference to an external data source.
10. The method of claim 9 wherein said external data source comprises at least one database.
11. The method of claim 9 wherein said reference identifies a position in said external data source.

12. The method of claim 1 wherein said processing criteria comprises a set of rules defining a type of said processing to be applied to said data.
13. The method of claim 12 wherein said processing comprises searching for a set of bits in said data from a plurality of stored sets of bits.
14. The method of claim 13 wherein said searching comprises determining if a computer virus is present in said data.
15. The method of claim 1 wherein said data is encrypted with at least one method of cryptography.
16. The method of claim 15 wherein said processing criteria comprises at least one method of cryptography.
17. The method of claim 15 wherein said indicator comprises a reference to at least one cryptographic key.
18. The method of claim 1 wherein said data comprises an electronic mail message.

19. The method of claim 1 wherein said data comprises packet data.
20. The method of claim 1 wherein said transferring further comprises reading information associated with said indicator to determine how to resume processing.
21. The method of claim 1 further comprising:
resuming processing by at least one of said plurality of processing nodes.
22. The method of claim 1 further comprising:
transferring said processing from said second processing node to a third processing node based on said processing criteria.
23. The method of claim 1 wherein said executing processing further comprises updating said indicator to store progress information.
24. A method for progressively processing data comprising:
receiving data at a first node associated with a plurality of processing nodes;
associating an indicator comprising a state of progress with said

data, wherein said associating depends on processing criteria comprising a type of said processing to be applied to said data;

executing processing of said data wherein an amount of said processing depends upon said state of progress;

modifying said indicator to identify a point to resume processing;

transferring said processing to a second processing node based on said processing criteria;

executing processing of said data at said second processing node wherein said processing performed by said second processing node begins at said point.

25. The method of claim 24 wherein at least one of said plurality of processing nodes performs said associating.
26. The method of claim 24 wherein said state of progress indicates said amount of processing already performed.
27. The method of claim 24 wherein said indicator further comprises a result of said processing.

28. The method of claim 24 wherein said indicator comprises a reference to an amount of data processed.
29. The method of claim 28 wherein said reference comprises a pointer.
30. The method of claim 28 wherein said reference comprises a value.
31. The method of claim 24 wherein said indicator further comprises a pointer to a size of said data.
32. The method of claim 24 wherein said indicator comprises a reference to an external data source.
33. The method of claim 32 wherein said external data source comprises at least one database.
34. The method of claim 33 wherein said reference identifies a position in said external data source.

35. The method of claim 24 wherein said processing criteria comprises a set of rules defining a type of said processing to be applied to said data.
36. The method of claim 24 wherein said processing comprises searching for a set of bits in said data from a plurality of stored sets of bits.
37. The method of claim 36 wherein said searching comprises determining if a computer virus is present in said data.
38. The method of claim 24 wherein said data is encrypted with at least one method of cryptography.
39. The method of claim 24 wherein said processing criteria comprises at least one method of cryptography.
40. The method of claim 24 wherein said indicator comprises a reference to at least one cryptographic key.
41. The method of claim 24 wherein said data comprises an electronic mail message.

42. The method of claim 24 wherein said data comprises packet data.

43. The method of claim 24 wherein said transferring further comprises reading information associated with said indicator to determine how to resume processing.

44. The method of claim 24 further comprising:
resuming processing by at least one of said plurality of processing nodes.

45. The method of claim 24 further comprising:
transferring said processing from said second processing node to a third processing node based on said processing criteria.

46. A method for progressively processing data comprising:
receiving data at a first node of a plurality of processing nodes;
associating an indicator with said data depending on processing criteria, said indicator comprising a state of progress;
executing processing of said data wherein amount of said

processing depends upon said state of progress, said processing comprising searching for sets of bits in said data from a plurality of stored bits;

modifying said indicator to identify a point to resume said processing;

transferring said processing to a second processing node based on said processing criteria;

executing processing of said data at said second processing node wherein said processing performed by said second processing node begins at said point.

47. The method of claim 46 wherein said searching comprises determining if a computer virus is present in said data.
48. The method of claim 46 wherein said indicator comprises a reference to an external data source comprising computer virus data.
49. The method of claim 49 wherein said reference identifies a position in said external data source.

50. A computer program product comprising:

a computer usable medium having computer readable program code for progressively processing data embodied therein, said computer readable program code configured to:

receive data at a first node of a plurality of processing nodes;

associate an indicator comprising a state of progress with said data;

execute processing of said data wherein amount of said processing depends upon said state of progress;

transfer said processing to a second processing node based on processing criteria.

51. An apparatus for progressively processing data comprising:

a processor;

memory coupled to said processor;

a mechanism for receive data at a first node of a plurality of processing nodes executing in said memory; said mechanism configured to associate an indicator comprising a state of progress with said data;

said mechanism configured to execute processing of said data wherein amount of said processing depends upon said state of

progress;

said mechanism configured to transfer said processing to a second processing node based on processing criteria.

52. A computer program product comprising:

a computer usable medium having computer readable program code for progressively processing data embodied therein, said computer readable program code configured to:

receive data at a first node associated with a plurality of processing nodes;

associate an indicator comprising a state of progress with said data, wherein said associating depends on processing criteria comprising a type of said processing to be applied to said data;

execute processing of said data wherein an amount of said processing depends upon said state of progress;

modify said indicator to identify a point to resume processing;

transfer said processing to a second processing node based on said processing criteria;

execute processing of said data at said second processing node wherein said processing performed by said second processing node begins at said point.

53. An apparatus for progressively processing data comprising:
 - a processor;
 - memory coupled to said processor;
 - a mechanism utilizing said memory, said mechanism configured to receive data at a first node of a plurality of processing nodes executing in said memory;
 - said mechanism configured to receive data at a first node associated with a plurality of processing nodes;
 - said mechanism configured to associate an indicator comprising a state of progress with said data, wherein said associating depends on processing criteria comprising a type of said processing to be applied to said data;
 - said mechanism configured to execute processing of said data wherein an amount of said processing depends upon said state of progress;
 - said mechanism configured to modify said indicator to identify a point to resume processing;
 - said mechanism configured to transfer said processing to a second processing node based on said processing criteria;
 - said mechanism configured to execute processing of said data at said second processing node wherein said processing performed by said second processing node begins at said point.

54. A computer program product comprising:

a computer usable medium having computer readable program code for progressively processing data embodied therein, said computer readable program code configured to:

receive data at a first node of a plurality of processing nodes;

associate an indicator with said data depending on processing criteria, said indicator comprising a state of progress;

execute processing of said data wherein amount of said processing depends upon said state of progress, said processing comprising searching for sets of bits in said data from a plurality of stored bits;

modify said indicator to identify a point to resume said processing;

transfer said processing to a second processing node based on said processing criteria;

execute processing of said data at said second processing node wherein said processing performed by said second processing node begins at said point.

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55. The computer program product of claim 54 wherein said searching comprises determining if a computer virus is present in said data.
56. The computer program product of claim 55 wherein said indicator comprises a reference to an external data source comprising computer virus data.
57. An apparatus for progressively processing data comprising:
- a processor;
 - memory coupled to said processor;
 - a mechanism utilizing said memory, said mechanism configured to receive data at a first node of a plurality of processing nodes executing in said memory;
 - said mechanism configured to associate an indicator with said data depending on processing criteria, said indicator comprising a state of progress;
 - said mechanism configured to execute processing of said data wherein amount of said processing depends upon said state of progress,
 - said processing comprising searching for sets of bits in said data from a plurality of stored bits;
 - said mechanism configured to modify said indicator to

identify a point to resume said processing;

said mechanism configured to transfer said processing
to a second processing node based on said processing criteria;

said mechanism configured to execute processing of said
data at said second processing node wherein said processing
performed by said second processing node begins at said point.

58. A method for progressively processing data comprising:

a means for receiving data at a first node of a plurality of
processing nodes;

a means for associating an indicator comprising a state of
progress with data;

a means for executing processing of said data wherein an
amount of said processing depends upon said state of progress;

a means for transferring said processing to a second processing
node based on processing criteria.